DESAIN KAPAL WISATA DI SUNGAI SUBAYANG, KAMPUNG GEMA, KAMPAR KIRI

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ABSTRAK

Sungai Subayang di Kabupaten Kampar, Provinsi Riau memiliki potensi sebagai kawasan wisata alam berbasis sungai sehingga memerlukan sarana transportasi air yang aman, nyaman, dan sesuai dengan karakteristik perairan. Penelitian ini bertujuan mendesain kapal wisata sungai berbahan aluminium yang memenuhi aspek keselamatan, stabilitas, dan kebutuhan operasional. Metode penelitian meliputi pengumpulan data lapangan dan studi literatur, penentuan *design requirement*, penentuan ukuran utama menggunakan metode kapal pembanding, perancangan *Lines Plan* dan *General Arrangement*, analisis hambatan menggunakan *Maxsurf Resistance*, evaluasi stabilitas berdasarkan IMO HSC *Code* 2000, perancangan konstruksi berdasarkan BKI *Rules for High Speed Craft* (July 2026 *Edition*, Pt 3, Vol III, Sec 3), serta pembuatan miniatur kapal skala 1:22. Hasil penelitian menghasilkan desain kapal dengan panjang 12,00 m, lebar 3,00 m, tinggi 1,20 m, *Draft* 0,60 m, kapasitas 20 penumpang dengan 2 *Crew*, dan kecepatan rencana 15 knot. Analisis hambatan menunjukkan hambatan total sebesar 15,48 kN dengan kebutuhan daya efektif sekitar 267,11 HP, sehingga dipilih 2 mesin tempel 150 HP untuk memenuhi kebutuhan operasional. Hasil evaluasi menunjukkan kapal memenuhi kriteria stabilitas IMO HSC *Code* 2000 sehingga desain yang dihasilkan layak dijadikan alternatif sarana transportasi wisata di Sungai Subayang.

Kata Kunci: Kapal Wisata Sungai, Sungai Subayang, Desain Kapal, Stabilitas.

DESIGN OF A TOURIST BOAT ON THE SUBAYANG RIVER, GEMA VILLAGE, KAMPAR KIRI

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ABSTRACT

The Subayang River in Kampar Regency, Riau Province, has significant potential as a river-based tourism destination, requiring a safe, comfortable, and suitable water transportation system that meets the characteristics of the river. This study aims to design an aluminum river tourism boat that fulfills safety, stability, and operational requirements. The research methods included field data collection, literature review, determination of design requirements, selection of principal dimensions using the parent ship method, development of the Lines Plan and General Arrangement, Resistance analysis using Maxsurf Resistance, stability evaluation based on the IMO HSC Code 2000, structural design according to the BKI Rules for Hull of Vessels up to 24 m (Volume VII), and fabrication of a 1:22 scale model. The proposed design has a length of 12.00 m, a beam of 3.00 m, a depth of 1.20 m, a Draft of 0.60 m, a Passenger capacity of 20 persons, and a service speed of 15 knots. The Resistance analysis resulted in a total Resistance of 15.48 kN and an Effective Power requirement of 267.11 HP. Based on these results, two 150 HP outboard Engines were selected to meet the propulsion requirements. The stability assessment confirmed that the vessel satisfies the IMO HSC Code 2000 criteria, indicating that the proposed design is suitable as an alternative river tourism transportation vessel for the Subayang River.

***Keywords**: River Tourism Boat, Subayang River, Ship Design, Stability.*